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**Biology Cellular Energy ( Ch. 8 Outline)**

*Vocabulary*: Define in your own words

Energy-

Thermodynamics-

Metabolism-

Photosynthesis-

Cellular respiration-

Adenosine Triphosphate (ATP)-

Thylakoid-

Granum-

Stroma-

pigment-

NADP+ -

Rubiso-

Anaerobic process-

Aerobic process-

Respond to the following questions/prompts:

What are the first two laws of thermodynamics? Explain what each law means. (4 pts)

What is the difference between an autotroph and a heterotroph? (2 pts)

What is the difference between an anabolic pathway and a catabolic pathway in terms of metabolism? (2 pts)

How do photosynthesis and cellular respiration differ? Be specific? (4 pts)

What are the two major steps of photosynthesis? What products are produced at each step? Describe the # of ATP and # of electron carriers produced at each step. Also, give a summary of what occurs at each step. (6 pts)

What are the three major steps of cellular respiration? Describe what products are formed at each stage of cellular respiration; include the # of ATP and # of electron carriers. What is the end product of cellular respiration? Explain. (8 pts)

Explain how ATP stores and releases energy. Also, explain ATP's structure. (4 pts)

Give a general idea of how the 3 types of photosynthesis are different. Describe how each type of photosynthesis is different. (3 pts)

***ABOUT THE READING:***

Write three things that you learned about Cellular Energy*:*

***Make sure to write a full sentence.***

*Example: I learned that the process of photosynthesis makes a sugar, which is later broken down by the mitochondria to make energy (ATP).*

*1.*

*2.*

*3.*